TEXTILE TECHNOLOGY DIGEST

VOLUME 11 MARCH, 1954 NUMBER 3

ABSTRACTS

FIBERS A

NATURAL FIBERS A 1

Practical partial acetylation of cotton

E. M. Buras, Jr., A. S. Cooper, E. J. Keating and C. F. Goldthwait. *Am. Dyestuff Reptr. 43:* P203-P208 (March 29, 1954).

Fibrous partially acetylated cotton was first prepared in England about 1900, but practical applications of outstanding properties of this material, heat and rot resistance, have been developed in the United States only recently, following the development of practical processes for its preparation at moderate cost. The Southern Regional Research Laboratory has worked out both batchwise and continuous processes. Fabric can be handled on stainless steel dye jigs, as used in cotton finishing plants, or on a newly developed continuous range; yarns may be treated in package form or continuously as warp; and raw stock may be handled in a raw stock dyeing machine. Well adapted for commercial use, the processes employ acetic acid and anhydride, with small amounts of perchloric acid as catalyst, to convert cotton into a new type of textile fiber. Data on the concentration of chemicals used, duration of treatments, temperature, and other conditions required for best results have been determined. Several commercial developments are based on these processes. 12 references.

The adsorption of water by wool. Part 4. The influence of combined acid on the affinity of wool for water

C. H. Nicholls and J. B. Speakman (Leeds University). *J. Textile Inst. 45:* T267-T271 (March, 1954).

The water-adsorption capacity of acid-containing wools is less than that of untreated wool at corresponding relative humidities approaching saturation. Of the eight acids examined, the greatest effect is produced by picric acid and the least by sulfuric acid. 6 references. Parts 1, 2 and 3 of this paper appeared in *J. Textile Inst. 27:* T183-T196 (1936).

The electrical resistance of wool and other textile materials

M. L. Wright (Wool Industries Research Assoc.). *(Letter to the Editor). J. Soc. Dyers Colourists 70:* 120 (March, 1954).

Formation of polymers in wool

G. W. Madaras and J. B. Speakman. *J. Soc. Dyers Colourists 70:* 112-116 (March, 1954).

When potassium persulfate is used in place of hydrogen peroxide, it is unnecessary to impregnate wool with ferrous ammonium sulfate in order to ensure preferential polymerization of methacrylic acid inside the fibers at 25°C. Polymerization is initiated by the free radicals which are formed by the action of potassium persulfate on the cystine disulfide bonds. With reduced fibers, however, potassium persulfate is not much more effective than hydrogen peroxide. 9 references.

White coir fiber from coconut husks

J. M. Bulder. *Fibres 15:* 81-82 (March, 1954).

Two difficulties that have stood in the way of making use of the fiber in coconut husks have been the problems of dissolving the hemi-cellulose fixing the fiber and dust, and the removal of tannin. In this article a description is given of a mechanical chemical process which overcomes these difficulties, enabling white fiber, capable of being spun and dyed in light shades, to be produced economically from coconut husks.

Extraction of jute and jute substitute fibers. Part 1

J. G. Thieme. *Textile Quart. 4:* 36-41 (January-March, 1954).

A new aerobic retting process in which the water is sprinkled on the raw material which is simply piled up in the open air in big stacks. 26 references.

Ramie. Part 3

B. Luniak. *Textile Quart. 4:* 57-64 (January-March, 1954).

Ramie decortication and decortication equipment are discussed.

Sisal products

Fibres 15: 78-80 (March, 1954).

A description of the processes used in converting sisal into usable fabric at the works of Sisal Products (East Africa) Ltd.

MAN-MADE FIBERS A 2

Man-made fiber data sheets. Part 3. Casein fibers: Fibrolane, Merinova, Caslen

P. A. Koch. *Modern Textiles Mag. 35:* 71-77 (April, 1954).

Properties, development, uses, etc. 72 references. This article originally appeared in *Z. ges. Textil-Ind. 55:* 1311-1316 (November 5, 1953).

Polyaminotriazoles

R. W. Moncrieff. *Texture 1:* 153-158 (March, 1954).

Polyaminotriazoles are a new class of fiber-forming compounds, made from hydrazine and a dicarboxylic acid. They are at their best copolymerized with nylon salt, when they possess excellent dyeing properties and, unique among the synthetics, can be dyed with direct colors. They are expected, too, to have other good properties such as a reasonably high moisture regain and kindliness of handle and to be comfortable to wear. 11 references.

Trelon, a new polyamide fiber

H. Ludewig. *Textil- u. Faserstofftech. 3, No. 12:* 543-544 (1953); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 174 (March 15, 1954).

The fiber, which is similar to Perlon and nylon, can be manufactured from lignite or furfurol (produced from agricultural waste products such as corn cobs or oat husks). Its melting point is about 20° C higher than that of Perlon which results in its greater resistance to ironing. Trelon is stable to cold and hot alkali lyes, but is destroyed by bleaching agents containing free chlorine. It is temporarily unaffected by dilute acids, provided that they are removed by subsequent washing or neutralization. It is also stable to the usual organic solvents (benzene, acetone, ether, etc.), but dissolves in formic acid, concentrated sulfuric acid, phenols (especially cresol) and in hot concentrated acetic acid. Its fastness to light, weather and moths, and its dyeing properties are similar to those of nylon and Perlon, and it can be used for similar purposes.

GENERAL A

Matthews' textile fibers: their physical, microscopic and chemical properties

Prepared by a staff of specialists under the editorship of H. R. Mauersberger. 6th edition. New York: John Wiley and Sons, 1954. 1283p. $16.50.

Since the publication of the fifth edition of this textile classic in 1947 a tremendous advance has been made in the development of man-made fibers. This was one of the fundamental reasons for bringing out a sixth edition at this time. All the other material has been brought up to date by old and new contributors, each of whom is well known in his own field. Some material from previous editions has been retained and new information added. This book is not concerned with fabrics, but with fibers and yarns and discusses their physical, chemical, and related properties. Production and trade statistics are included. The book is intended as a textbook for college and technical schools, and also as a reference book for all those concerned with the production, processing, conversion, and sale of yarns and fabrics of the different fibers now used in the apparel and related industries. Extensive bibliographies are included at the end of each chapter.

Significance of fiber moisture absorption

Texture 1: 159-161 (March, 1954).

A brief general discussion of the influence of absorbed water in the internal structure of each fiber and its consequent influence on fiber properties in relation to dyeing and finishing.

YARNS B

CARDING AND COMBING B 2

Carding machine for waste

Wurttembergische Textilmaschinenbau G.m.b.H. *Reyon, Zellwolle u. Chemiefasern 32:* 61-62 (January, 1954); *in German.*

This machine consists of a single carding set (roller card) for the carding of cotton waste. The licker-in is replaced by a combing cylinder which equalizes the fibers. The web obtained is wound up to the roving by a web guide and it is ready for spinning immediately. The advantage is that only half the amount of carding machinery is needed.

The effect of worker speed on the transfer of material from a swift

W. E. Butterfield and P. P. Townend *(Letter to the Editor). J. Textile Inst. 45:* T272-T274 (March, 1954).

DRAWING AND ROVING B 3

Cotton drawing systems

J. J. Tschudi. *Melliand Textilber. 35:* 229-230 (March, 1954); *in German.*

The author discusses some aspects of the practical experience which he has gained in the field of cotton high-draft systems; he points out factors in preliminary processing which are of importance for the subsequent spinning operation, and offers a means of considerably improving the condition of the laps.

Ideal Industries drawing frame

Ideal Industries, Inc., Bessemer City, N. C. *Textile World 104:* 112 (April, 1954).

Equipped with the Ideal high-speed drafting system that has been supplied as a change-over roll system, this new drawing frame also features a new ball-bearing fiber tube-gear mechanism that eliminates static and avoids horseshoeing long fibers. It is recommended for use on cotton and all staple synthetic fibers.

Removal of outside slivers

K. Muller. *Melliand Textilber. 35, No. 1:* 28-29 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 218 (March 31, 1954).

The advantages of a pneumatic device for returning the outside sliver into the weighing apparatus and the problems of a satisfactory pipeline system (cross section of the pipes, airtightness, etc.) are discussed.

A theory of drafting and its practical applications

P. F. Grishin (T.M.M. Research Ltd.). *J. Textile Inst. 45:* T167-T266 (March, 1954).

The work is divided into four main sections: (1) *A survey of existing theories* of drafting with particular reference to the work of Professor Vasilieff (1902). The paper is, the author claims, essentially a continuation and a logical termination of Professor Vasilieff's theory. (2) *Analysis of the drafting process.* The movement of a single fiber in a drafting process is analyzed. Experimental confirmation of the theory is given by measurement of individual fibers of sliver, roving and yarn after the drafting operation. (3) *Synthesis of the drafting process.* Consideration of a single fiber is gradually extended to an investigation of the cross-section of a product and the laws of drafting are deduced. (4) *Practical application of the theory.* Comparison is made of existing well-known systems of drafting and optimum spinning conditions are found from the theory outlined earlier in the paper. Details of experiments are given in appendices and the paper is illustrated with 38 figures. 34 references.

SPINNING, WINDING, TWISTING B 4

New statistical aspects of spinning

A. Arano. *Industrie Textile:* 493-495 (July, 1953); 551-557 (August, 1953); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 218 (March 31, 1954).

The relationship between the movements of fibers (during drawing and twisting) and yarn irregularity is discussed, and a statistical method based on the two independent variables, length and fineness of the fiber, is described. The author also discusses the average positions of the fibers, random fibers, irregularities due to drawing, measurement of the irregularities, improved drawing devices, twisting, and the spinning procedure.

Adjustable cleaners

J. P. Sloan. *Textile World 104:* 95,280 (April, 1954).

A new-type of traveling overhead cleaner (Parks-Cramer Co. Type CT) installed on spinning frames at Joanna Cotton Mills Company is claimed to improve quality, reduce costs, and ease spinners' work.

Flax spinning: theory and practice. Part 2. Machinery and equipment. Chapter 13. Twisting (continued).

A. V. Pringle. *Textile Quart. 4:* 42-55 (January-March, 1954).

The lay-out of spinning centrifuges

F. Oertel. *Reyon, Zellwolle u. Chemiefasern 31, No. 12:* 687-693 (1953); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 218 (March 31, 1954).

Advantages of the centrifuge spinning process are pointed out and the mechanical forces involved in this process are analyzed. Its disadvantage lies in the winding of the yarn which is not built up firmly on the bobbin from the center outwardly (as on the ring-spinning machine), but is wound from outside towards the center, showing a hole in the center. This hole must be filled when the centrifuge is stopped so as to avoid shrinkage of the cake into a ball as soon as the centrifugal force ceases. Several constructions for eliminating this disadvantage are described.

The MAK S. A. mule, type 641, rope- and stringless. Part 2

W. Forster. *Z. ges. Textil-Ind. 56:* 324-327 (March 20, 1954).

Pacific converter

Warner and Swasey Co. *Textile World 104:* 120 (April, 1954).

The Pacific converter can be modified to process Orlon yarns for the knitting trade by Du Pont's new heat-stretch method.

Tow-to-sliver spinning

F. Walz. *Textil-Praxis 8, No. 12:* 1025-1027 (1953); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 177 (March 15, 1954).

Processes developed for spinning staple fiber yarn are reviewed, and a machine developed by J. J. Rieter and Cie, Winterthur, Switzerland, called thhe Cut-dra-fil ring spinning machine, is described. The main feature of this machine is a cutting tool for cutting the sliver; by switching off this device, however, it is also possible to produce drawn fibers. Conditions for smooth operation of the machine and the remarkable regularity of the yarn produced are pointed out.

Control of the doubling process

R. Darcy. *Industrie Textile:* 799-801 (November, 1953); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 218 (March 31, 1954).

A new procedure, developed by the Etablissements Chomarat, is described, in which a hollow spindle is used to effect a direct passage of the thread from one end to the other of the downward-moving spindle. This new process makes it possible to draw-in directly, in a single operation, the hard twist and all the initially slightly or non-twisted, very fluffy and knotty threads, without having to subject them to preliminary twisting. The process may be used in the manufacture of tire cords.

Stop motions for cheese winding frames

J. Schneider. *Z. ges. Textil-Ind. 56, No. 2:* 94-96; *No. 3:* 127-129 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 221 (March 31, 1954).

The author describes various constructions, pointing out the differences between them and giving drawings to illustrate operational details. The automatic stop motions are divided into two groups, (1) broken-end stop motions, and (2) full-bobbin stop motions, and include such motions for double-winders and yarn-singeing frames.

Two-for-one twister

Deering, Milliken Research Trust, Pendleton, S. C. *Textile World 104:* 109 (April, 1954).

A 25-lb. package is the feature of a new two-for-one twister. The two-spindle unit has a separate motor for each spindle and a creel that takes 20 packages. Now being used for tire cord by Deering, Milliken, the twister also has applications in the tufted rug, chenille, and industrial-fabric branches of the industry.

GENERAL B 5

Blending fibers

G. V. Lund. *Textile World 104:* 87-88, 311-312 (April, 1954).

The author makes the following points: (1) breaker-drawing blends, although not perfect, are about as good as you can get, (2) for good blending, finer yarns need fewer doublings but finer fibers need more doublings, (3) moisture content has little effect on blend uniformity.

Sandwich mix for uniform blending of wool

W. J. Crofts. *Textile Ind. 118:* 168-173 (April, 1954).

A number of suggestions are made for good blending, including (1) use many thin layers, (2) for wool-rayon blends, oil wool and then blend, (3) for wool-nylon blends, blend and then oil, (4) test scales periodically.

Relationships between twist and other parameters of yarns

A. Barella. *Ingen. Textile 20, No. 104:* 274-284 (1953); *in Spanish.* Through *Brit. Cotton Ind. Research Assoc. 34:* 202 (March 15, 1954).

In this review the author discusses the distribution of twist in yarns and the relationships between twist and tensile strength (optimum twist), regularity, and elastic behavior, respectively. Graphs and eleven literature references are presented.

Trends in the rayon staple spinning industry in France

P. Boutry. *J. Textile Inst. 45:* P93-P107 (March, 1954).

Machinery and processing procedures and data are discussed. Comments are also made on the French textile industry and French textile research laboratories.

Hydraulic yarn bundling press

Joseph Stubbs Ltd., Manchester, England. *Textile Wkly. 53:* 891-892 (March 26, 1954).

This new bundling press is designed to make 5 lb. or 10 lb. bundles of cotton or woolen hanks.

FABRICS C

WARPING, SLASHING, YARN PREPARATION C 1

Silicones vs can-sticking

F. Fortess and S. T. Bowen. *Modern Textiles Mag. 35:* 31,79 (April, 1954).

Silicone resins for slasher can anti-sticking treatments. A number of tests are described.

Size preparation

J. Schneider. *Reyon, Zellwolle u. Chemiefasern 32:* 5-9 (January, 1954); *in German.*

The article describes the purposes and requirements of sizes. A survey of sizes for cotton, wool, and synthetic fibers is presented in classified form.

Tension control in warp sizing

Textile Mfr. 80: 144-148 (March, 1954).

Variable speed drives, tensions in rayon and cotton warp sizing and effects of tension in dyeing are discussed. 6 references.

Automatic quiller

W. Schafhorst and Co., M. Gladbach, Germany. *Textile World 104:* 116 (April, 1954).

This Autocopser ASE automatic quiller features a grooved yarn-guide traverse that provides a firm, non-parallel, conical wind. The quiller can wind at above 12,000 rpm. Three 12-head machines can be supplied with empty quills from one optional automatic hopper feed.

Cone winder

Foster Machine Co., Westfield, Mass. *Textile World 104:* 112 (April, 1954).

This new automatic cone winder Model 202 features a tender that sucks up ends and ties a standard weaver's knot. The automatic bobbin sorter separates empty and partially filled bobbins. An operator can handle 16 to 18 bobbins per minute.

Terylene processing

D. N. Marvin. *Textile Merc. 130:* 503-507 (March 19, 1954).

Points to watch in winding and warping,

WEAVING C 2

Jute and linen weaving. Part 2. Chapter 9. Picking (continued)

T. Woodhouse and T. Milne. *Textile Quart. 4:* 28-35 (January-March, 1954).

Quality in weaving

D. C. Snowden (University of Leeds). *Texture 1:* 167-169 (March, 1954).

A brief general discussion of some aspects of loom tuning and cloth defects.

Selvage formation on shuttleless smallwares looms

R. Hunlich. *Melliand Textilber. 35:* 240-242 (March, 1954); *in German.*

The author cites a number of German patent claims which he uses to demonstrate the development of devices for selvage formation on shuttleless smallwares looms.

Slack tension of the thread is as detrimental as rupture

C. Dumont. *Industrie Textile:* 803-804 (November, 1953); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 223 (March 31, 1954).

A knocking-off motion is described which not only stops the loom when a warp thread breaks, but also if the tension is at its highest or lowest limit. It also indicates by its position the degree of thread tension, and the weaver can immediately find in the warp the broken thread or one whose tension is abnormal.

The Sulzer loom

Tidsskr. Textiltek. 12: 56-62 (March, 1954); *in Danish.*

The Sulzer loom is constructed on a new principle, as the weft insertion in this loom is performed by small gripper-shuttles. These do not contain any weft supply themselves but draw it from a large stationary package and introduce it into the shed. This system makes high speeds possible when weaving wide fabrics and secures at the same time good quality and regularity. The present article describes the Sulzer loom in detail and includes the construction of the loom and the weaving operation, together with a discussion of the special advantages it offers.

Tension control for 44HH Bemberg yarns

J. R. Fish. *Textile World 104:* 82-83, 312-315 (April, 1954).

Controlling the yarn tension on each individual end is claimed to make it possible to weave the new Bemberg yarns at 95% efficiency with less than 5% seconds. Instruments to check yarn tension in processing and weaving take the guesswork out of yarn tension control.

Textile calculations. Part 10. Calculations concerning loom mechanisms and production

N. C. Gee. *Textile Mfr. 80:* 120-123 (March, 1954).

Exercises and worked examples concerning cloth take-up with the five wheel intermittent positive motion, the five wheel (dividend or gauge point) motions, the Pickles, Dobcross, Hattersley and Northrop motions.

Utilization of Jacquard machines without harness cords

V. Luzet. *Rayonne et Fibres Synthet. 10, No. 1:* 43-45 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 222 (March 31, 1954).

The system described, consisting of a dobby-like mechanism, makes it possible to use Jacquard machines in the manufacture of cloth with small patterns. The healds are driven by means of a transmission device similar to that of a dobby.

Warp stop motions: pinning

W. Middlebrook. *Textile Mfr. 80:* 124-127 (March, 1954).

Weaver jobload

D. D. Deming. *Textile World 104:* 94,281-288 (April, 1954).

To set up a weaver's loom assignment the author recommends making an accurate job description and analysis, and determining by time study exactly how long it takes to start a stopped loom. He recommends keeping elements simple, separating the variable elements, determining frequencies of stops, and allowing for adequate inspection by the weaver.

Weaving faults

G. Turton. *Textile Wkly. 53:* 848-852 (March 19, 1954).

Avoiding defects in filament rayon: weft preparation problems, avoiding abrasion, and pirn design.

Weaving faults. Part 2

G. Turton (British Rayon Research Assoc.). *Textile Wkly. 53:* 904-908 (March 26, 1954).

Avoiding defects in weaving filament rayon. Weft tension, bright picks, the shuttle, timing of the shedding motion, and the back roller are discussed.

Will the laminated shuttle replace the wooden one?

A. David. *Industrie Textile:* 887-888 (December, 1953); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 222 (March 31, 1954).

The Société Fibre et Mica has developed a new weaving shuttle consisting of a wooden nucleus covered with a resin-impregnated cloth. The shuttle is claimed to be more durable and resistant to rubbing and, owing to its glass-like surface, to pass smoothly through the shed. This results in an increased weaving rate.

Yarn consumption control for economical cloth manufacture

M. Paul. *Melliand Textilber. 35:* 242-244 (March, 1954); *in German.*

The author offers practical advice on methods of achieving substantial savings in weft and warp yarn consumption by means of special controls in weaving. In the manufacture of fabrics, the costs for yarn often amount to more than 50% of the total costs, so that such economies will bring about a very effective justification of the whole process.

KNITTING C 3

Manufacture and design of nylon tricot. Part 1

J. Rab. *Knitter 18:* 40-46 (April, 1954).

Principles of weft knitting. Part 11. Fully-fashioned hose manufacture

S. B. Bradley. *Brit. Rayon and Silk J. 30:* 53-56 (March, 1954).

The English foot style is described and a complete description is given of the leg blank (including detailed diagrams) and subsequent processes.

GENERAL C 4

Experiments on the relationship between yarn and fabric regularity

A. Barella, F. Maillard, O. Roehrich, E. Amouroux, J. M. Garcia-Planas and S. Perich. *J. Textile Inst. 45:* P82-P87 (March, 1954).

The authors have reconsidered the controversial question of the relation between the regularity of the yarns and that of the fabrics, and this paper gives the results of some first experiments. The following conclusions were reached: (1) For equal regularity of mass in a yarn, the regularity of the appearance of the fabric made from it depends directly on the regularity of the apparent diameter of the yarn. (2) Measurements of fabric transparency by photometric methods agree with the subjective assessment of experts in placing the fabrics in order of regularity. (3) The present experiments confirm the previous suggestion of the influence of twist on yarn regularity. 11 references.

Structure and analysis of fabrics

V. Lobl. *Riv. Tessile Aracne 8, No. 12:* 1685-1687 (1953); *in Italian.* Through *Brit. Cotton Ind. Research Assoc. 34:* 236 (March 31, 1954).

The problem of selvages is investigated and examples of characteristic weaves, such as weft and warp ribs, basket weave, and three- and four-leaved twill weave are given. A defect frequently occurring in twill-weave fabrics (curly or wavy selvages) is discussed and suggestions are made for its prevention.

Surface finishing of fabrics by electrostatic flocking

R. Hunlich. *Reyon, Zellwolle u. Chemiefasern 32:* 9-10 (January, 1954); *in German.*

Several appliances are described for electrostatic flocking with cotton and rayon. A machine is also described for printing on this flocked fabric (screen or roller printing) to give an additional finish.

Metal detectors

E. Blasberg and A. de Groot. *Philips Tech. Rev. 15, No. 3:* 96-104 (1953). Through *Brit. Cotton Ind. Research Assoc. 34:* 206 (March 15, 1954).

Two metal-detectors are described which give warning of the presence of unwanted metal particles in non-metallic materials. The first of these was designed for detecting metal particles in bulk materials, the unit being sensitive to iron particles as small as 0.1 mg. in weight; for copper, brass, or aluminum the sensitivity is roughly one quarter of that for iron. The second unit was developed for the detection of iron particles in strip materials such as textiles. It is of simpler and more robust construction than the first, but it only reacts to ferro-magnetic materials.

Cloth setting reconsidered. Part 6

S. Brierley. *Textile Mfr. 80:* 129-130 (March, 1954).

Warp backed fabrics are discussed.

Design in woven fabrics. Part 17. Spot effects by combination of color and weave

Wool Rev. 27: 41-43 (March, 1954).

FINISHES D

WET PROCESSES D 1

Chemical finishing techniques. Part 2. Softening, water repellency, shrinkage control

A. C. Nuessle (Rohm and Haas Co.). *Textile World 104:* 92-93, 330-334 (April, 1954).

Dyeing and finishing; a review of developments in 1953

A. J. Hall. *Textile Merc. (Suppl.) 130:* 71-75 (March, 1954).

Dyeing and finishing piece goods made from Dynel-rayon and Dynel-rayon-acetate blends

F. C. Rippner (Carbide and Carbon Chemicals Co.). *Am. Dyestuff Reptr. 43:* P209-P212 (March 29, 1954).

Dynel's properties of luster, dyeability, and heat sensitivity are discussed, as well as the scouring, dyeing, and finishing of rayon-acetate-Dynel and rayon-Dynel blends.

Machinery for the dyeing and wet finishing of synthetic blends

H. F. Creegan (James Hunter Machine Co.). *Textile Age 18:* 20-24 (March, 1954); 62-65 (April, 1954).

Man-made fibers and modern trends in wet processing. Part 1. Preparatory treatments

Brit. Rayon and Silk J. 30: 49-52 (March, 1954).

A review of developments during 1953. 26 references.

Wet processing

J. H. Hunter. *Modern Textiles Mag. 35:* 32-33, 62 (April, 1954).

The James Hunter Machine Company's Barotor and improved Vapojet drying system are discussed.

Construction of a two-drum washing machine and its effect on wear and tear of the washed articles

H. Hollstein. *Textil- u. Faserstofftech. 3, No. 12:* 557-560 (1953); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 204 (March 15, 1954).

Conditions in the two-drum washing machine, where the articles are washed in the inner drum, are investigated, and the individual stages of the total movement are considered. The percentage loss of tensile strength of the washed material is calculated as a function of the peripheral velocity of the drum, taking into account the sensitivity of the respective textile material.

Mechanical and chemical damage to fabrics during washing

H. Schwerdtner. *Textil- u. Faserstofftech. 3, No. 12:* 549-556 (1953); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 205 (March 15, 1954).

This review of mechanical and chemical damaging factors shows that the fabrics are mainly damaged by mechanical factors. Bleaching, the main chemical factor, should be eliminated, if possible. The alkali additions should be chosen so as to produce the lowest possible ash content in the washed fabrics. The detergents should be based on high-quality fatty substances which loosen the dirt spontaneously without excessive mechanical stress being exerted on the fabric. Accurate washing directions, giving detailed information as regards temperature, time, amount of detergent, wash-liquor ratio, etc., should be supplied by the manufacturer. The need for suitable testing methods is pointed out.

Bleaching of type 670 nylon

B. K. Easton (Buffalo Electro-Chemical Co.). *Modern Textiles Mag. 35:* 66-68 (April, 1954).

A simple new method using peracetic acid is claimed to provide superior whites. This article presents typical bleaching procedures as used in the mill, information on recommended materials of construction for bleaching equipment, on bleach bath stabilizers and make-up of the bleach bath.

Developments in the field of bleaching, with special reference to chlorite bleaching

H. Baier. *Textil-Praxis 8, No. 12:* 1070-1077 (1953); *in German.* Through *Brit. Cotton Ind Research Assoc. 34:* 187 (March 15, 1954).

Processes and advantages of bleaching rayon, staple fibers, linen, bast fibers, and cotton with sodium chlorite, activated by addition of acids, are discussed and a method for the preparation of hydrophilic cotton is outlined. Reference is also made to other possibilities of activating the chlorite bleaching bath, particularly by addition of hypochlorite, and to continuous peroxide bleaching.

Granular sodium peroxide

W. A. S. White (Imperial Chemical Industries, Ltd.). *Dyer 111:* 417-422 (March 19, 1954).

A discussion of various methods of bleaching cotton, linen, rayon, and jute with sodium peroxide.

The significance of optical bleaching agents for the production of washing and rinsing agents

K. Lindner. *Seifen-Ole-Fette-Wachse 79:* 412-413, 438-441 (1953). Through *Chem. Abstr. 47, No. 22:* 12822 (1953).

The structure, effect in products, and the determination of optical brightening are reviewed. An optical bleaching agent is strongly absorbed by fabrics during the first few washing or rinsing processes, less in subsequent operations. Adsorption is favored by closeness of weave and agitation during washing.

How to trap lost profits in mercerizing. Part 2. Standard operations

D. V. Guillemette. *Textile Age 18:* 74-76 (April, 1954).

Deterioration of cuprammonium-proofed jute fabric and its prevention

W. G. MacMillan, S. N. Basu and P. N. Pal. *Fibres 15:* 85-88 (March, 1954).

The natural deterioration of cuprammonium-proofed jute fabric has been found to be mainly

due to the liberation of acid, presumably from ammonium sulfate deposited as a by-product. Research workers at the Indian Jute Mills Association Research Institute, Calcutta, have found that the addition of sodium carbonate, in suitable amounts, to the usual formula counteracts this effect. Data are given. 6 references.

Flame-proof finishes of textiles

E. Kleiner. *SVF Fachorgan Textilveredlung 8, No. 10:* 463-465; *No. 11:* 509-512; *No. 12:* 559-567 (1953); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 196 (March 15, 1954).

The development and present state of research is reviewed, and the term *flame-fast* is defined as a condition in which the flame does not extend beyond the carbonization zone. In addition to the originally non-permanent finishes with soluble salts, permanent flame-proofing agents, which are stable to washing, are reviewed (two-bath processes, resin-finishes, and products for use in emulsion form), and a simple method for testing the stability of the finishes is described by means of which reproducible values can be obtained. The effects of the individual finishes are compared, and particular reference is made to the new product Aflamman. The possibilities and future aspects of flame-proof finishes are also discussed.

Mothproofed for life

Fibres 15: 97-98 (March, 1954).

In this article the use of Mitin FF 400 per cent is described both for application from the dyebath and as an after-treatment.

Investigation on the anti-felt finishing of wool

O. E. Ford. *Melliand Textilber. 35:* 279-281 (March, 1954); *in German.*

By replacing hypochlorous acid with hypobromous acid, wool can be given an anti-felt finish at a pH as much as a whole pH value higher than otherwise. The author discusses the Stevenson-Raynes process using hypochlorite and permanganate. The permanganate treatment must be carried out before the hypochlorite develops its action. In using ozone, the results depend decisively upon the moisture content of the goods (optimum 20%).

Unshrinkable wool finish

A. J. Hall. *Textile Merc. 130:* 514-516 (March 19, 1954).

Practical experience with the Si-Ro-Fix process (forming a film of regenerated nylon on the surface of each wool fiber) is described and the importance of pretreatment of the wool is emphasized. The relationship of pretreatment to the Drisol process is also discussed. Numerous references to the literature.

DYEING AND PRINTING D 2

Changes in vat- and naphthol-dyed fabrics during subsequent soaping

K. Joss. *SVF Fachorgan Textilveredlung 8, No. 9:* 393-398; *No. 10:* 444-451; *No. 11:* 497-504; *No. 12:* 548-555 (1953); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 188 (March 15, 1954).

In this extensive paper the author reviews the present state of research and describes experiments carried out with these dyes, preparation of the fabrics for dyeing, after-treatment of the dyed materials, and methods for detecting any changes caused by the after-treatment. The experimental results, presented in the form of graphs and tables, are evaluated and discussed. It is concluded that the after-treatment causes identical changes in the vat- and naphthol-dyed fabrics, but the vat colors undergo a slower change than the naphthol tints.

Chrome dyeing of wool piece goods

F. Ulbig. *Melliand Textilber. 35:* 269-271 (March, 1954); *in German.*

This paper discusses from the aspect of the practical cloth manufacturer methods of achieving perfectly even shades on wool piece goods dyed by afterchroming or monochrome process. The author shows that chrome dyeing of piece goods presents no greater difficulties than are involved in chrome dyeing of cheeses.

Dyeing by means of mordants

G. Dierkes. *Rayonne et Fibres Synthet. 10, No. 1:* 65-82 (1954); *in French. Rayon, Zellwolle u. Chemiefasern No. 1:* 29-34 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 227 (March 31, 1954).

In this paper the author discusses acid dyes which, although having only slight or no affinity for vegetable and animal fibers, form with colloidal metallic hydroxides water-insoluble, stable, brightly colored complexes, known as lakes. Practical application of these metal hydroxides in dyeing wool, silk, polyamide, and cellulosic fibers before or after their treatment with mordants (prechroming and postchroming process), or simultaneously

(metachroming) is discussed in detail, and a dyeing process is outlined, which involves the use of Turkey-red oil for oiling the cotton, pretreated to remove fatty constituents and pectins and to render it more absorbent. The mordants used in this dyeing process are mainly the hydroxides of aluminum, chromium and iron.

Dyeing with disperse dyes

A. E. Stubbs (Bleachers' Assoc. Ltd.). *(Letter to the Editor). J. Soc. Dyers Colourists 70:* 120-122 (March, 1954).

New neutral-dyeing metalized wool colors

H. F. Clapham (E. I. du Pont de Nemours and Co.). *Am. Dyestuff Reptr. 43:* P200-P202, P208 (March 29, 1954).

Neutral-dyeing metalized dyestuffs that do not contain active sulfonic acid groups constitute a comparatively new class, which is useful in the dyeing of fast shades on both wool and nylon. The author reports that the development of these dyestuffs took place concurrently in Europe and the United States and that the full usefulness of such products was not at first appreciated. He discusses the fastness properties of the Capracyl brand of these dyestuffs on wool and nylon, points out how simply they are applied, and presents experimental curves showing exhaustion rates on wool and nylon.

Pad dyeing synthetics with acetate dyes

J. K. Holliday (Interchemical Corp.). *Modern Textiles Mag. 35:* 59-60 (April, 1954).

This new method consists essentially of passing the material to be dyed through a pad liquor containing a highly dispersed acetate dye or dyes, selected penetrates, a suitable swelling agent, a gum, and water; then developing in a jig, box, or other suitable equipment.

Pressure dyeing and bleaching with special reference to recent developments

F. H. Marsh. *J. Soc. Dyers Colourists 70:* 105-112 (March, 1954).

A general survey of methods and equipment.

Water soluble naphthols for dyeing wool

H. Rath and E. Feess. *Melliand Textilber. 35:* 267-269 (March, 1954); *in German.*

This paper describes attempts carried out to produce water soluble naphthols in the form of glucosides or sulfuric acid ester salts. After they have been applied to the fiber, these glucosides or ester salts can be split and coupled with diazonium salts to insoluble azoic dyestuffs. With increasing crystallization of the naphthol formed, the coupling became weaker. Attempts should be made to overcome this difficulty by means of crystallization inhibitors.

DRY PROCESSES D 3

High-speed napping machine

Franz Muller Maschinenfabrik, M. Gladbach, Germany. *Textile World 104:* 118 (April, 1954).

This machine for pile and counterpile napping is said to operate at up to 40 yards per minute on some fabrics.

GENERAL D 4

Textile finishing developments. Part 4. Finishing processes

Textile Wkly. 53: 836-842 (March 19, 1954).

The author discusses new chemicals and auxiliaries for finishing such as synthetic high nitrile rubber for improving the serviceability of denim, regenerated nylon for a non-felting unshrinkable wool finish and the quarternary ammonium compounds as textile deodorants, bactericides, etc. References to the literature are included.

Textile finishing developments. Part 4. Finishing processes (continued)

Textile Wkly. 53: 912-915 (March 26, 1954).

Softness of hand and resins in textile finishing are reviewed. References to the literature.

TESTING AND MEASUREMENT E

FIBERS E 1

A rapid method for the determination of the residual grease content of wool in scouring

R. Gunther. *Melliand Textilber. 35:* 261-262 (March, 1954); *in German.*

This rapid method permits an exact refractometric determination of the residual grease content of wool and a continuous control of the wool scouring process.

Solubility in acid as a means of determining changes in wool

H. Zahn and A. Wurz. *J. Textile Inst. 45:* P88-P92 (March, 1954).

A method is described for the determination of changes in wool. This method consists in as-

certaining the loss in weight after treatment with 4N hydrochloric acid for 60 minutes at 65°C. By acid-solubility is to be understood the percentage loss in weight under these conditions. The application of acid-solubility determinations to the elucidation of changes in wool is demonstrated on examples taken from industry and research. 7 references. This paper was published in German in the November 1953 issue of *Textil-Praxis*.

YARNS E 2

Analysis of the results of a visual test of textile yarn

A. G. Baker, K. W. Hillier and R. H. Woodward (Imperial Chemical Industries Ltd.). *Appl. Statistics 3:* 12-18 (March, 1954).

By analyzing the results of a specially planned set of observations on filament yarns, the authors are able to show that a partially subjective test of yarn quality can give reliable results. The errors are estimated. This article also presents an interesting example of the use of transformations of the observed variable. 4 references.

How to evaluate Uster charts

E. H. Bond. *Modern Textiles Mag. 35:* 36, 83-84 (April, 1954).

This article discusses the application of the Uster tester in the card room in checking linear variations and isolating those cards or card groups which are in excess of the Uster standard. Cumulative frequency diagrams show the distribution of off-standard cards before and after application of the trouble-shooting program in a mill.

FABRICS E 3

Analysis of warp-knitted fabrics. Part 4. Methods of determining fabric structure and manufacturing particulars from small samples

D. F. Paling. *Brit. Rayon and Silk J. 30:* 57-60 (March, 1954).

Analysis of samples involving (1) miss-lapping of one set of threads and (2) part-set threading in one guide-bar and full-set threading in the other bar.

Fabric surface study

R. Krammes and C. Maresh (Calco Chemical Div., American Cyanamid Co.). *Am. Dyestuff Reptr. 43:* 189-191 (March 29, 1954).

By the effective use of replication, metallic evaporation, and photomicrography, a true picture may be obtained of many types of fabric surfaces after treatment with a finishing agent. These data are useful in the comparison of existing products and in the development of new finishes. The procedure is described. 10 photomicrographs. 20 references.

Sewability tests for cotton fabrics

D. E. Brooks. *Textile Mfr. 80:* 150-152 (March, 1954).

Details and results are given of a seam efficiency test which consists of sewing a seam in the fabric, breaking the fabric at the line of stitching and establishing a ratio between the original and the seamed fabric strengths.

GENERAL E 4

Differential refractometer for measurements on colored solutions: design and construction

E. Atherton and E. Cowgill. *J. Soc. Dyers Colourists 70:* 116-120 (March, 1954).

A differential refractometer, suitable for the measurement of refractive indexes of dyes, is described, and some of its uses are indicated. The instrument is of the prism type, utilizing a small spectrometer to provide monochromatic light. Refractive index values are obtained by means of a rotating mirror driven by a differential screw, which cancels the deviation conferred on the light beam by the dye solution. Several advantages of the instrument for measurements in spectral regions of maximum absorption are discussed. 9 references.

INDUSTRIAL ENGINEERING F

MACHINERY AND MAINTENANCE F 1

Boiler house instrumentation. Part 2

F. H. Slade. *Textile Mfr. 80:* 113-118 (March, 1954).

A variety of instruments are described and diagramed. Automatic control of steam pressure and continuous adjustment of air and fuel ratio for maximum combustion efficiency are discussed.

Electricity in the wool textile industry

A. J. Francis and T. H. Carr. *Textile Mfr. 80:* 137-143 (March, 1954).

Machine drive problems are examined and methods of overcoming them are suggested. Tables and diagrams are given.

Textile engineer: a review of machinery developments during 1953

Textile Merc. (Suppl.) 130: 53-59 (March, 1954).

QUALITY AND WASTE F 3

Quality control

N. L. Enrick. 2d revised and enlarged edition. New York: Industrial Press, 1954. Brighton, England: Machinery Publishing Company, 1954. 193p. $4.00.

This book is a considerably enlarged version of an earlier edition. It is distinguished from other texts of similar title by its emphasis on control not only of piece parts but also of continuous and semi-continuous production, such as occurs in spinning, weaving and finishing. Prominently featured are ready-made sampling schedules for piece parts and continuous product, including the so-called sequential plans. The usual control chart techniques are illustrated. Analysis of variance, an important tool of investigation in textile trouble shooting, is presented in a simplified version. There are numerous graphic illustrations as an aid in demonstrating practical applications and promoting visual realization of statistical sampling concepts. The announced purpose of the book is to give simple easy-to-follow explanations by keeping out all unnecessary mathematics or complex formulas. For those readers who are interested, the mathematical background of the practical tables and procedures is explained in separate chapters which may be skipped by the practical user. The material utilized in the book is based upon consulting experience in more than thirty plants and mills.

Quality control through statistical methods. Part 7. Sampling economically and effectively

N. L. Enrick. *Modern Textiles Mag. 35:* 44-56 (April, 1954).

This instalment, seventh in a series, provides methods for determining the all-important questions of "how many tests?" that occur in textile sampling and quality control. The following topics are discussed: methods utilized by the American Society for Testing Materials to determine proper number of tests; adaption of these methods to testing programs within a mill; determination of amount of sampling required in testing for non-uniformity; determination of amount of observation time in ends down and loom stop testing. The factors entering into these determinations are the coefficient of variation of the material under study, the allowable sampling error, and the degree of quality assurance desired. These factors are then fed into the proper formula to yield approximate number of tests as the answer. Graphic illustrations and flow charts from actual mill use supplement the text material.

Statistical methods for evaluation of several sets of constants and several sources of variability

H. Scheffe. *Chem. Eng. Progr. 50:* 200-205 (April, 1954).

A discussion of the mathematical theory of analysis of variance as applied to chemical engineering problems. Analysis of variations, interaction and residuals are the factors discussed.

SCIENCES G

CHEMISTRY G 1

Bibliographical abstracts of methods for analysis of synthetic detergents.

American Society for Testing Materials. Philadelphia, 1954. 20p. $1.25.

The booklet covers the years 1929 to 1951, and contains subject and author indexes. It will be useful to persons engaged in the manufacture, analysis, development and evaluation of surfactants.

Papers on soaps and other detergents.

American Society for Testing Materials. Philadelphia, 1954. 25p. $.75.

The first five papers were presented at the March 1953 meeting of ASTM Committee D-12 on Soaps and Other Detergents and are reprinted from the ASTM Bulletin. A sixth paper was was added because of its related interest.

PHYSICS G 2

Effect of electrostatic (atmospheric) charge upon finishing and processing of textile fibers

A. Sippel. *Textil-Praxis 8, No. 12:* 1030-1033 (1953); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 202 (March 15, 1954).

The main factor responsible for the electrostatic charge of fibers, namely, water (in and on the fiber, in the air, and on the surface of machine parts), is discussed and the fibers are grouped together on the basis of their positive or negative charge. Factors affecting the charges (degree of twisting, fiber- and yarn-thickness, spinning-oil content, nature of emulsifiers used, etc.) and effect of the charges upon chemical and physical properties of the fibers are discussed. It is concluded that the electrostatic charge depending upon atmospheric conditions is negligible and, generally, cannot be made responsible for any interferences occurring during processing.

Radioactive isotopes in wool research

A. Robson. *Fibres 15:* 91-93 (March, 1954).

In this article a brief account is given of the manner in which radioisotopes are being used in wool research, with particular reference to research at the Wool Industries Research Association laboratories.

Resistivity: one clue to the electrostatic behavior of fabric

N. A. Teixeria and S. M. Edelstein. *Am. Dyestuff Reptr. 43:* P195-P199, P208 (March 29, 1954).

To help readers understand the problem of static electricity in textile processing, the authors explain the fundamental principles of this phenomenon, which has intrigued scientists much longer than current electricity. They begin with definitions, then explain how charges are developed, and describe the mechanisms by which charges of static electricity are dissipated. The measurements to which a textile may be subjected to measure its tendency to become electrified and the effect of antistatic agents and atmospheric conditions on these measurements are shown and discussed. The conclusion emphasized by the authors is that practical mill experience with an antistatic agent on a particular fiber is more important for evaluation of effectiveness than measurements. 19 references.

BIOLOGY G 3

Destruction of cellulose-containing textile by microbes

H. Ostertag. *Melliand Textilber. 35:* 224-226 (March, 1954); *in German.*

The author gives a survey and brief description of the most important micro-organisms which attack cellulose, and discusses the infection and decomposition mechanism of the cellulosic fiber. He points out the importance of distinguishing between the micro-organisms which really decompose the fiber and the growth that vegetates only on the finish.

MISCELLANY H

Cotton Research Clinic

Textile Ind. 118: 174-183 (April, 1954).

Eleven papers given at the fifth annual Cotton Research Clinic in February, 1954 are abstracted.

New processing ideas from Cotton Research Clinic. Part 1

Textile World 104: 78-79, 318-320 (April, 1954).

Summaries are given of the papers on processing from the fifth annual Cotton Research Clinic held in February, 1954.

Swiss textile directory, 1953-1955

3rd ed. Frauenfeld, Switzerland: Huber and Co. AG, 1954. $6.50.

The third edition of the Swiss textile directory is a new, enlarged and fully revised publication and gives useful information on Swiss textile goods, from raw materials to the finished products. The directory, is divided into three sections dealing with (1) the various fibers and the manufactures made from these fibers, (2) making up —including embroidery, knitted and woven goods, etc., and (3) textile machinery, textile auxiliaries, etc. There is a comprehensive four-language index and classification is by subject.—*J. Textile Inst. 45:* P80 (March, 1954).

Who weaves what (Wer Webt Was)

Hauptverband Baumwollweberei. Frankfurt a.M.: Verlag fur Wirtschaftspraxis, 1953. 473 pages. *In German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 125 (February 15, 1954).

This directory of cotton manufacturers in West Germany lists the firms according to district and products.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

FIBERS A

NATURAL FIBERS A 1

Chemical modification of wool with beta-propiolactone and water

H. P. Lundgren, W. G. Rose and H. W. Jones (to the United States of America). USP 2 672 397, March 16, 1954.

MAN-MADE FIBERS A 2

Method for the spinning of yarn from artificial fibers (in particular from glass fibers) without carding or twisting machines

J. Riedel (Sklarny a Rafinerie, Czechoslovakia). BP 694 561, July 22, 1953.

Method of and means for the manufacture of staple fiber products (tow to top)

J. Wilson, J. K. Wain and G. W. Walls (British Rayon Research Assoc.). BP 693 362, July 1, 1953.

YARNS B

OPENING AND PICKING B 1

Lap-forming apparatus in textile machines

J. J. Rieter and Cie (Switzerland). BP 693 264, June 24, 1953.

CARDING AND COMBING B 2

Apparatus for selectively accumulating noils, short fibers, or other material, from a plurality of stations

E. Clark (to Abington Textile Machinery Works). USP 2 672 369, March 16, 1954.

Top roll clearer for combers

C. E. Snyder. USP 2 673 375, March 30, 1954.

DRAWING AND ROVING B 3

Apparatus for drafting textile fibers

G. H. Ambler (to Ambler Superdraft Ltd., England). USP 2 673 376, March 30, 1954.

Cleaning devices for the drafting heads of textile machinery

A. T. Johnston (to English Sewing Cotton Co. Ltd.). BP 692 878, June 17, 1953.

Drafting apparatus for textile fibers

J. Noguera (Casablancas High Draft Co. Ltd.). BP 694 272, July 15, 1953.

Preparation of textile fibers for treatment by intermediate frames

H. Spencer (Oldham Twist Co. Ltd.). BP 695 615, August 12, 1953.

Roller clearers for use in drafting mechanisms for textile fibers

J. Noguera (to Casablancas High Draft Co. Ltd.). BP 692 964, June 17, 1953.

Tension roller mounting for the lower apron of a textile drawing device

F. A. Kumpers K. G. (Germany). BP 693 129, June 24, 1953.

Textile drafting apparatus

W. A. Hunter, R. M. Blackburn and W. Hunter (T. M. M. (Research) Ltd.). BP 694 817, July 29, 1953.

Textile roll covers

Armstrong Cork Co. BP 693 641, July 1, 1953.

SPINNING, WINDING, TWISTING B 4

Apparatus for distributing air in a plurality of localities from a common supply duct

A. P. Fowler (Carrier Engineering Co. Ltd.). BP 695 643, August 12, 1953.

Apparatus for spinning fibrous materials
J. Meimberg (Germany). BP 695 136, August 5, 1953.

Change speed gear for bobbin spindles of spinning machines
T. Hindmarch. BP 692 612, June 10, 1953.

Devices for changing bobbins in spinning machines
C. O. Christianson. BP 693 512, July 1, 1953.

Driving device for the spindles of spinning machines, doubling machines and the like
A. Perotti (Macotex S.r.l.). BP 694 169, July 15, 1953.

Flyers for fly-frames
L. J. Rameau (Manufacture de Caoutchouc Michelin). BP 693 243, June 24, 1953.

Flyers for spinning machine spindles
A. T. Streeton (British Thomson-Houston Co. Ltd.). BP 693 515, July 1, 1953.

High-speed textile spinning machine spindles
A. T. Streeton (British Thomson-Houston Co. Ltd.). BP 693 515, July 1, 1953.

Pressure roller arrangement for textile speed frames and spinning machines
F. Calzone. BP 695 057, August 5, 1953.

Rings for ring spinning and doubling frames
J. S. Roch (Spain). BP 692 399, June 3, 1953.

Spindle for spinning or twisting machines
W. J. Netelenbos, M. Otger and J. G. Robbenhaar (Netherlands). USP 2 672 007, March 16, 1954.

Spindle for textile spinning and twisting frames
H. Staufert (Germany). BP 694 824, July 29, 1953.
A spindle that can be stopped without affecting a row of spindles driven by the same belt.

Spinning system
W. Rowedder. USP 2 671 304, March 9, 1954.

Tension pulleys for textile spinning and twisting machines
W. Gaunt (Gaunt, Rhodes and Bower Ltd.). BP 695 666, August 12, 1953.

Textile drawing, twisting, doubling and spinning machinery
W. Hardacre and E. Beaumont (Courtaulds Ltd.). BP 695 649, August 12, 1953.

Top-roll for spinning frames or the like
R. Rulon-Miller (to Dixon Corp.). USP 2 671 934, March 16, 1954.

Machines for winding a helix of thread on a mandrel
H. Smith (to Dunlop Rubber Co.). BP 690 625, April 22, 1953.

Spool winding machines
T. Norcross (to Dunlop Rubber Co. Ltd.). BP 691 930, May 27, 1953.

New knot for connecting two ends of twisted products (i.e. rayon tire cords)
Algemene Kunstzijde Unie N. V. (Netherlands). BP 692 327, June 3, 1953.

Textile twisting and spinning spindles with centrifugal clutch
G. Curtis (to Courtaulds Ltd.). BP 692 944, June 17, 1953.

Yarn twisting and tensioning device
N. E. Klein (to Deering Milliken Research Trust). USP 2 671 305, March 9, 1954.

GENERAL B 5

Apparatus for applying false twist to yarn, sliver and tow
W. C. Long (to E. I. du Pont de Nemours and Co.). USP 2 673 442, March 30, 1954.

Electrical drive for textile machines
J. C. Milne (to the Electric Construction Co. Ltd., England). USP 2 671 942, March 16, 1954.

Glass fiber twine and method of making the same
G. Slater (to Owens-Corning Fiberglas Corp.). USP 2 671 306, March 9, 1954.

Machines for manufacturing twisted core chenilles

M. Braditch (France). BP 690 803, April 29, 1953.

Method of blending fibers

L. I. Fidell (to American Cyanamid Co.). USP 2 671 250, March 9, 1954.

Blending fluorescent dyed fibers with undyed fibers until the mixture shows the desired degree of uniformity when exposed to ultraviolet light.

Pneumatic cleaner

H. C. Bechtler (to Pneumafil Corp.). USP 2 672 723, March 23, 1954.

Textile fiber converting apparatus

D. G. C. Hare (to Deering Milliken Research Trust). USP 2 672 654, March 23, 1954.

FABRICS C

WARPING, SLASHING, YARN PREPARATION C 1

Sized glass strands and method of making same

L. P. Biefeld and J. P. Stalego (to Owens-Corning Fiberglas Corp.). USP 2 671 744, March 9, 1954.

Cop winding machines

H. L. Muschamp and J. R. Grady. BP 693 354, July 1, 1953.

Delivery of the doffed packages in bobbin winding frames

Maschinenfabrik Scharer (Switzerland). BP 693 382, July 1, 1953.

Feeding the thread or yarn in skein winding machines: method and means

G. C. Doelter (Austria). BP 695 531, August 12, 1953.

Machine for the winding of thread and yarn hanks, tying off their ends and folding the wound hanks

Abraber Trust (Switzerland). BP 693 483, July 1, 1953.

Machines for winding threads

A. E. Herbert, J. Woods and R. Turner (John Bright and Brothers Ltd.). BP 693 400, July 1, 1953.

Constant tension device for use when winding a horizontal bobbin from a package below it.

Pirn winding and like machines

R. A. Kimber and P. E. R. Coleman (to Crowther Ltd.). BP 692 090, May 27, 1953.

Pirn winding machine

A. H. Croucher (to Wildt and Co. Ltd., England). USP 2 673 039, March 23, 1954.

Pneumatic removal of fly from thread winding machines: equipment

K. J. Scharer (Switzerland). BP 694 794, July 29, 1953.

Short-traverse mechanism for bobbin winding machines

G. C. Joyce (to Whitin Machine Works). USP 2 673 691, March 30, 1954.

Tightening the loop formed during the end-knotting of mechanically wound and knotted skeins: method and apparatus

G. Doelter and H. Starke. BP 695 528, August 12, 1953.

Unwinding of bobbins or packages of thread in textile machines

R. Dewas (France). BP 693 212, June 24, 1953.

Warping machines for textile threads

A. Robertson, J. L. M. Morrison and A. W. H. Porter (F.N.F. Ltd.). BP 693 708, July 8, 1953.

Yarn brake for use with creels and other textile machines

N. V. Machinefabriek L. te Strake (Netherlands). BP 693 361, July 1, 1953.

WEAVING C 2

Automatic control devices for circular looms

Qualitex-Societe (Dunod and Cie, France). BP 677 832, August 20, 1953.

Automatic weft replenishment for looms

Officine Galileo, S.P.A. (Italy). BP 695 456 August 12, 1953.

Circular loom
N. N. Low and J. Catry (to Fairwest (U. K.) Ltd., England). USP 2 671 472, March 9, 1954.

Circular looms
C. Christiansen and G. O. K. Rusch. BP 692 397, June 3, 1953.

Conical bobbins of paper on fabric impregnated with resin
J. Prior. BP 694 641, July 22, 1953.

Determination of shuttle timing in looms
S. Jefferson (to National Research Development Corp.). BP 691 927, May 27, 1953.

Filling grate for looms
R. M. Ingham, Jr. (to Deering Milliken Research Trust). USP 2 672 895, March 23, 1954.

Filling thread gripping and cutting device
E. C. Alix and H. A. Wilson. USP 2 672 165, March 16, 1954.

Flanged bobbin with snap-on protected edge
J. J. Bliss (Acrometal Products Inc.). BP 695 133, August 5, 1953.

Flanged cores or warp beams
L. Lasch and F. Eastwood (Magnesium Elektron Ltd.). BP 695 286, August 5, 1953.

Lay for looms
J. M. Tuten (to Draper Corp.). USP 2 671 474, March 9, 1954.

Let-off motions for looms
F. Glover and C. Culshaw. BP 694 046, July 15, 1953.

Loom
G. Robinson (to Lebanon Woolen Mills). USP 2 672 894, March 23, 1954.

Loom picker
L. W. Campbell. USP 2 671 473, March 9, 1954.

Loom shuttles
E. D. Pease and C. R. Little. BP 693 571, July 1, 1953.

Loom stopping means
P. Monroe (to Hoosac Mills Corp.). USP 2 672 167, March 16, 1954.

Looms for circular weaving
Qualitex-Societe (Dunod and Cie, France). BP 677 716, August 20, 1953.

Looms for two fabrics side by side
Soc. Fabbrica Tessuti Industriali Brevetti Scamperle (Italy). BP 695 453, August 12, 1953.

Metal bobbin for packages of low-denier, low-twist cellulose acetate thread
G. Curtis (to Courtaulds Ltd.). BP 692 943, June 17, 1953.

Method and apparatus for cutting through weft threads during weaving on looms
Sulzer Freres Soc. Anon. BP 693 340, June 24, 1953.

Methods of manufacturing nets with a shuttle and mesh stick
C. Quelos (France). BP 693 313, June 24, 1953.

Picker stick check
C. W. Kuykendall. USP 2 672 893, March 23, 1954.

Picking motion of under-pick looms
Coeurtys Soc. Anon. (Switzerland). BP 690 815, April 29, 1953.

Pneumatic device for picking the weft
V. Svaty (Czeskoslovenske Textilni Zavody Nar. Pod., Czechoslovakia). BP 693 751, July 8, 1953.

Process for manufacturing raised fabrics for blankets, plaids and the like
L. Radici (Italy). BP 693 294, June 24, 1953.

Reeds for textile purposes
M. M. Taylor (British Celanese Ltd.). BP 693 629, July 1, 1953.

Shedding mechanism for circular looms
Fayolle and Cie (France). BP 695 512, August 12, 1953.

Shuttle driving mechanism for weaving looms or machines

W. Keil (Germany). USP 2 672 164, March 16, 1954.

Shuttleless weaving looms

V. Werner and K. Kubelka (Prototypa Nar. Pod., Czechoslovakia). BP 693 509, July 1, 1953.

Small-ware looms

L. S. Cawthorn (to Smith & Co.). BP 692 938, June 17, 1953.

Spool Axminster carpet loom

I. B. Bassindale (to Platt Brothers and Co. Ltd., England). USP 2 672 166, March 16, 1954.

Stop motions of weaving looms

I. S. Porter (Wilson and Longbottom Ltd.). BP 694 329, July 15, 1953.

Take-up motion for looms

Maschinenfabrik Ruti Akt. Ges. (Switzerland). BP 693 380, July 1, 1953.

Unwinding of bobbins or packages of thread in looms

R. Dewas (France). USP 2 673 576, March 30, 1954.

Warp let-off motions for looms for weaving

J. Diggle, G. N. Beilby and F. Green. BP 656 933, September 5, 1951.

Warp let-off motions for looms for weaving

J. Diggle and G. N. Beilby. BP 692 819, June 17, 1953.

Weft detector device for weaving looms

J. A. Galloway and H. S. Cargill. BP 694 666, July 22, 1953.

KNITTING C 3

Guard apparatus for the needles of knitting machines

A. M. Wolf (Australia). USP 2 672 036, March 16, 1954.

Knitting machine needle

W. Liniger (to Max Lehner and Co. A. G., Switzerland). USP 2 671 327, March 9, 1954.

Sinker head for flat full-fashioned knitting machines

J. J. Slattery. USP 2 672 035, March 16, 1954.

Yarn control device

G. E. Stokes (to Hosiery and Allied Trades Research Assoc.). BP 692 784, June 17, 1953.

GENERAL C 4

Fibrous material in sheet form: manufacture

E. C. Shaw. USP 2 672 672, March 23, 1954.

Fibrous material for filters and the like: manufacture

E. C. Shaw. USP 2 672 673, March 23, 1954.

Fibrous material in sheet form: manufacture

E. C. Shaw. USP 2 672 674, March 23, 1954.

Fibrous sheet material and method of making it

J. W. Wendell. USP 2 673 819, March 30, 1954.

Method and apparatus for bonding fibers together

M. A. Chavannes and J. W. Howden (to Chavannes Industrial Synthetics, Inc.). USP 2 671 496, March 9, 1954.

Braiding machine

R. Marogg. USP 2 672 071, March 16, 1954.

Composite textile material comprising a felted layer

N. P. F. Sommer (France). BP 694 460, July 22, 1953.

Heat-retentive napped fabric and method of making the same

U. Giandomenici (Italy). USP 2 671 475, March 9, 1954.

Method and apparatus for forming apertured fabric

G. L. Mills (to Bates Manufacturing Co.). USP 2 673 577, March 30, 1954.

Pile fabric for cold weather clothing

W. E. Cowie and A. E. Blouin (to the Minis-

ter of National Defence of Her Majesty's Canadian Government). Can. Pat. 501 314, April 6, 1954.

Production of thermoplastic-material-backed pile carpets

G. B. E. Schueler. BP 692 422, June 3, 1953.

Tufting device for rug making

C. B. Wilson (England). USP 2 672 109, March 16, 1954.

Woven-endless tubular fabric: means for and method of making

G. Walters. USP 2 672 163, March 16, 1954.

Drive for web winding apparatus

A. J. Seyerlein. USP 2 673 692, March 30, 1954.

Spindle bearing

E. D. Meadows (to Meadows Manufacturing Co.). USP 2 671 702, March 9, 1954.

Stripping waste yarn from bobbins

W. V. Coles and E. Clayton (Courtaulds Ltd.). BP 694 588, July 22, 1953.

FINISHES D

WET PROCESSES D 1

Anti-static treatment of cloth, paper or leather

Kodak Ltd. BP 693 975, July 8, 1953.

Apparatus for applying conditioning liquid to a moving web

E. M. Flint (to Vapo Systems Co.). USP 2 672 844, March 23, 1954.

Apparatus for treating impregnated roving and yarn

R. B. Newton (to Dan River Mills Inc.). USP 2 673 546, March 30, 1954.

Apparatus for washing fabrics without tension

P. F. Van Vlissinger and Co's Katoenfabrieken N. V. (Netherlands). BP 694 158, July 15, 1953.

Coated nylon fabrics

W. Charlton and E. G. Rutter (to Imperial Chemical Industries Ltd.). BP 690 706, April 29, 1953.

Coating of textile materials with d-isocyanate-modified polyesters on one side only

Farbenfabriken Bayer (Germany). BP 692 045, May 27, 1953.

Impregnating cellulose textile fibers

T. C. Whitner. USP 2 671 740, March 9, 1954.

A bath for impregnating cellulose fibers which comprises an aqueous solution of a tetra-alkylol ammonium hydroxide saturated with cupric hydroxide and dissolved silk.

Method of rendering textile materials water repellent by means of a paraffin emulsion and a solution of a pre-condensate or a urea or thiourea condensation product

Nico ter Kuile & Zonen N. V. (Netherlands). BP 692 900, June 17, 1953.

Process for rendering films and the like water-repellent, greaseproof and moistureproof

A. L. Bauling and D. T. Milne (to American Viscose Corp.). USP 2 672 427, March 16, 1954.

Process of manufacturing vapor permeable fluid repellent fabrics

L. P. Biefeld and A. R. Morrison (to Owens-Corning Fiberglas Corp.). USP 2 673 825, March 30, 1954.

Tensioning and drying a wet thread: apparatus

O. Williamson and H. L. Higgins (to Dan River Mills, Inc.). USP 2 673 385, March 30, 1954.

Topochemical modification of cellulose textile materials

C. A. Fetscher (Cluett, Peabody and Co. Inc.). BP 693 111, June 24, 1953.

Yarn package support for processing

E. F. Zingg (to Societe de la Viscose Suisse, Switzerland). USP 2 671 332, March 9, 1954.

DYEING AND PRINTING D 2

Coloration of textile yarns (nylon)

L. Pownall (British Nylon Spinners Ltd.). BP 693 839, July 8, 1953.

Machines for treating textile goods with dyes and other liquids

G. S. Helliwell and J. L. Swindall (Bromley and Co. Ltd.). BP 693 106, June 24, 1953.

Method of dyeing and a device for use in making up dye recipes

Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk. BP 693 356, July 1, 1953.

Porous resilient bobbin

J. Annicq (Belgium). BP 694 815, July 29, 1953.

Production of pigmented prints and dyeings on fabrics

Badische Anilin & Soda-Fabrik (Germany). BP 694 076, July 15, 1953.

Roller printing machines particularly for printing fabrics

Schlieper and Baum Akt. Ges. (Germany). BP 695 041, August 5, 1953.

Textile bobbin support and spacer

J. Annicq (Belgium). BP 695 151, August 5, 1953.

Treatment of powder to allay dust

R. K. Fourness (Yorkshire Dyeware and Chemical Co. Ltd.) BP 693 765, July 8, 1953.

Vat dyestuff preparations and a process of producing the same

Badische Anilin- und Soda-Fabrik (Germany). BP 694 473, July 22, 1953.

DRY PROCESSES D 3

Chamber-like devices for drying textile materials

Gebruder Sucker G. m. b.H. (Germany). BP 695 582, August 12, 1953.

Drier for reels of textile fibers

G. Ilune (France). USP 2 671 276, March 9, 1954.

Drying apparatus for processing printed or coated webs or sheets of material

H. H. Beasley (Beasley, French and Co. Ltd.). BP 693 281, June 24, 1953.

Drying cylinders

A. Rigby (to Rigby & Mellor Ltd.). BP 695 215, June 3, 1953.

Drying of fabric

A. J. Pentecost (Hicking, Pentecost & Co. Ltd.). BP 694 499, July 22, 1953.

Hosiery drying machine

G. S. Helliwell and J. L. Swindall. (Mellor Bromley and Co. Ltd.). BP 694 509, July 22, 1953.

Shearing or cropping of tubular knit fabrics

J. A. Elliman and F. H. J. Smith (to George Spencer Ltd.). BP 691 018, May 6, 1953.

Stabilizing and setting nylon and similar yarns

T. Geeson (to Adshead & Geeson Ltd.). BP 692 637, June 10, 1953.

Tentering machine

T. C. Roberts (to Winsor and Jerauld Manufacturing Co.). USP 2 673 384, March 30, 1954.

Treatment of flexible materials with powder, granular matter or the like

J. A. Reed and T. Topham (Tootal Broadhurst Lee Co. Ltd.). BP 693 619, July 1, 1953.

GENERAL D 4

Apparatus for feeding cord fabric to or from a treatment apparatus

C. Folliss (Dunlop Rubber Co., Ltd.). BP 693 825, July 8, 1953.

Apparatus for stretching and guiding tubular textile fabric

J. Dungler (France). BP 690 283, April 15, 1953.

Tensioning mechanism for moving webs

W. F. Huck (to Huck Co.). USP 2 670 907, March 2, 1954.

TESTING AND MEASUREMENT E

YARNS E 2

Abrading yarn

Ernest J. Griset, Jr. (to American Enka Corporation). USP 2 657 522, November 3, 1953.

Abrading yarn by using an abrading ring and the ballooning action of the up-drawn yarn.

Instrument for measuring the tensile strength of glass filaments

G. A. Warren (Fibreglass Ltd.). BP 694 585, July 22, 1953.

Means for feeding successive lengths of thread and the like to thread testers

Zellweger Akt. Ges. (Switzerland). BP 693 136, June 24, 1953.

Yarn unevenness tester

J. A. Truitt (to American Viscose Corp.). USP 2 671 199, March 2, 1954.

FABRICS E 3

Hosiery length measuring device

M. N. Holmes (to Burlington Mills Corp.). USP 2 669 866-867, February 23, 1954.

Testing the resistance of textile fabric to abrasion flexing, and creasing: apparatus

M. C. Shaw (to Asbestos Textile Institute). USP 2 670 627, March 2, 1954.

BOOKS, PAPERS, AND PAMPHLETS

Added to the library during the past month

ADMINISTRATION

Mace, M. L.	The growth and development of executives.	Boston, Div. of Research, Graduate School of Business Admin., Harvard Univ., 1950. 200 p.
Riegel, J. W.	Executive development; a survey of experience in fifty American corporations.	Ann Arbor, Univ. of Michigan Press, 1952. 369 p.
Tead, Ordway	The art of administration.	N. Y., McGraw-Hill, 1951. 223 p.

CHEMISTRY

	Advances in carbohydrate chemistry, v. 8.	N. Y., Academic Press, 1953. 408 p.
	Elsevier's encyclopedia of organic chemistry. Series III Carboisocyclic condensed compounds. Vol. 12B Naphthalene. A. Compounds containing one naphthalene nucleus. p. 3965-4560. Naphthoic acids and their halogen, nitrogen, and hydroxyl derivatives.	Amsterdam, Elsevier Pub. Co., 1953.
Siggia, Sidney	Quantitative organic analysis via functional groups. 2d ed.	N. Y., Wiley, 1954. 227 p.

COTTON

U. S. Agricultural Marketing Service.	Summary of fiber and spinning test results for some varieties of cotton grown by selected cotton improvement groups, crop of 1953.	Wash., Feb. 1954. 38 p.
Whitten, M. E.	Cotton linters—production, marketing, and market outlets.	Wash., U. S. Dept. of Agriculture, Nov. 1953. 49 p.

DYEING AND FINISHING

Rizzo, Frank J.	The influence of preparation and method of dyeing and finishing on the color and colorfastness of vat dyed cottons. (Textile series report no. 69).	Office of the Quartermaster General, Research and Development Div., 1953. 80 p.

FIBERS

Courtaulds Ltd.	Fibrolane: Courtaulds' protein fibre.	Manchester, England, 1953. 16 p.
Pohle, E. M.	Suggested staple lengths for grades of grease wool.	Denver, Colo., U. S. Production and Marketing Admin., Livestock Branch, Oct. 1953. 10 p.
Susich, George	Mechanical conditioning of textile fibers. (Textile series report no. 82).	Office of the Quartermaster General, Research and Development Div., 1953. 55 p.

FLAMEPROOFING

Reeves, W. A.	Flameproofing of cotton with THPC-resins. (AIC-364).	New Orleans, La., Southern Regional Research Laboratory, Nov. 2, 1953. 11 p.

STATISTICS

Brearley, A.	An outline of statistical methods for use in the textile industry. 3d ed.	Leeds, Wool Industries Research Association, 1953. 77 p.

Burington, R. S.	Handbook of probability and statistics with tables.	Sandusky, Ohio, Handbook Publishers, Inc., 1953. 332 p.
Gumbel, E. J.	Statistical theory of extreme values and some practical applications. (Applied mathematics series no. 33).	Wash., U. S. National Bureau of Standards, Feb. 12, 1954. 51 p.
Pearson, E. S.	The application of statistical methods to industrial standardisation and quality control.	London, British Standards Institution, Nov. 1935. 161 p.
Tippett, L. H. C.	On the extreme individuals and the range of samples taken from normal population.	Photostat from: *Biomet Rika 17:* 364-387 (1925).
U. S. National Bureau of Standards.	Tables of the binomial probability distribution. (Applied mathematics series, no. 6.).	Wash., Jan. 27, 1950. 387 p.

TESTING AND ANALYSIS

Grover, E. B.	Handbook of textile testing and quality control.	Raleigh, N. C. State College School of Textiles, 1953.
Harris, J. C.	Detergency evaluation and testing.	N. Y., Interscience Publishers, 1954. 210 p.
Roberts, O. J.	Evaluation of experimental wool and synthetic blends in air force velour overcoat material. (WADC technical report 53-444).	Wright-Patterson Air Force Base, Ohio, Wright Air and Development Center, Nov. 1953. 37 p.
Rose, G. R. F.	Determination of dodecyl dimethyl benzyl ammonium naphthenate in textile materials.	Ottawa, National Research Council of Canada, Nov. 1952. 8 p.
Tintometer Ltd.	A handbook of colorimetric chemical analytical methods for industrial, research and clinical laboratories. 2d ed.	Salisbury, England, 1953. 206 p.
Webb, R. W.	The Causticaire method for measuring cotton-fiber maturity and fineness: improvement and evaluation.	Wash., U. S. Agricultural Marketing Service., Dec. 1953. 62 p.

TEXTILE TECHNOLOGY

International Congress of Sciences Applied to the Textile Industry.	Celebration du 75me anniversaire de l'A. I. G., 8-13 Sept., 1951. (32 papers in French, English, and Dutch.)	Ghent, Belgium, Association des Ingenieurs Sortis des Ecoles Speciales de Gand, 1951. 501 p.

TEXTILE WORKERS

Barkin, Solomon	Textile workers' job primer, v. 1. A trade unionist's guide for handling work assignment and production standard problems.	N. Y., Textile Workers' Union of America, CIO, 1953. 214 p.
U. S. Bureau of Labor Statistics.	Wage structure: hosiery.	Wash., Nov. 1952. 72 p.

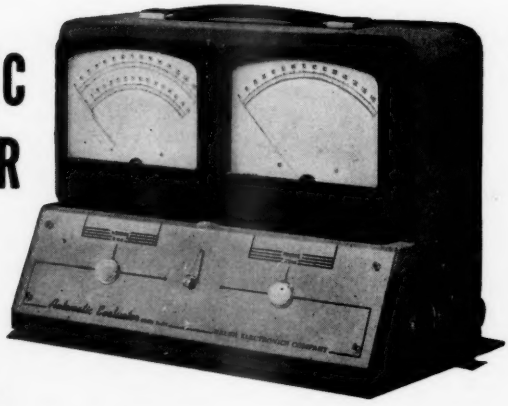
WEAVING

British Electrical Development Assoc. — Electricity in weaving. — London, 1953. 24 p.

YARNS

Taylor, J. L. — A study of the effect of twist on the properties of synthetic filament yarns. (WADC technical report no. 52-55.) — Atlanta, Ga., Georgia Inst. of Technology, Jan. 1951. 138 p.

AUTOMATIC EVALUATOR



for Brush Uniformity Analyzer*simplifies quality control

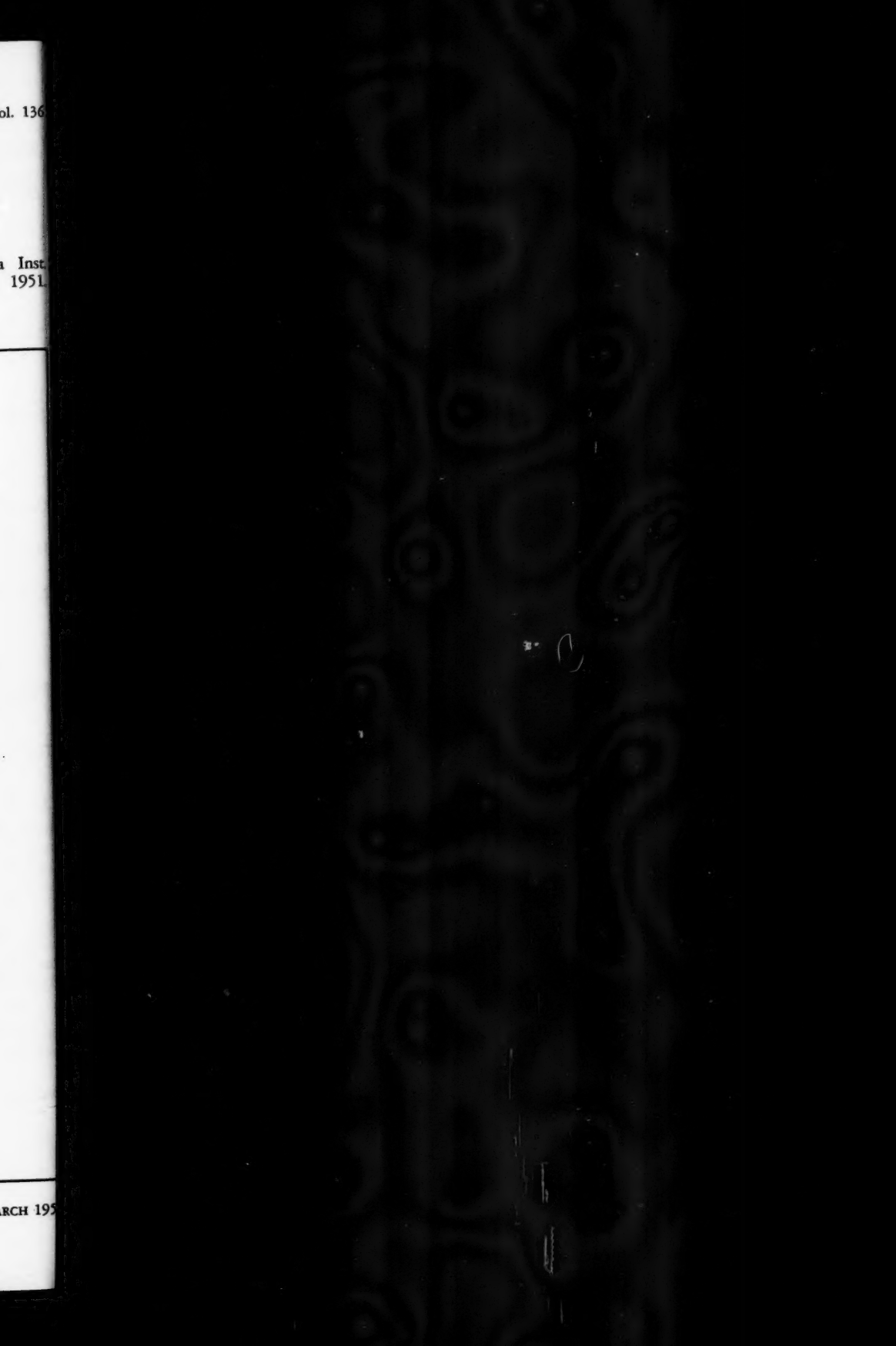
With Brush equipment you can obtain complete non-uniformity data on a 1000-foot sample of yarn in less than 4 minutes. The dial correlates directly with chart records—thus no variations are averaged out. The Evaluator is very simple to use, and automatic signals indicate when readings should be taken.

Use the experience of our textile-trained engineers in simplifying your quality control. Write Brush Electronics Co., Dept HH-3, 3405 Perkins Ave., Cleveland 14, Ohio; or Southeastern Textile Instrument Office, 91 Cleveland St., Greenville, S. C.

*Trade Mark

BRUSH ELECTRONICS COMPANY

INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZO-ELECTRIC MATERIALS • ACOUSTIC DEVICES
MAGNETIC RECORDING EQUIPMENT
ULTRASONIC EQUIPMENT

BRUSH ELECTRONICS

formerly The Brush Development Co. Brush Electronics Company is an operating unit of Clevite Corporation.